



New York State Science Education Consortium

A Cooperative Association of Professional Science Education Organizations

A Proposal to Support Teachers Transitioning to the New NYS Science Learning Standards Executive Summary

Proposal Overview:

A scientifically literate public and vibrant scientific culture are essential for the future prosperity of the United States. This requires a high-quality science education and means that in addition to traditional content, students must develop key skills such as communication, collaboration, inquiry, and problem solving, that will serve them throughout their educational and professional lives¹. Unfortunately, past New York State science standards and pedagogy, though rich in content, have frequently not met the challenge of truly engaging students and creating critical thinkers and problem solvers.

To prepare students for the challenges and opportunities of the future, and after considerable work, New York State has adopted the NYSP-12 Science Learning Standards (NYSP-12SLS) which are based on guiding documents found in “A Framework for K-12 Science Education²” and the “Next Generation Science Standards³”. Consequently, these new standards are grounded in the most current research in science and scientific learning. These new standards reflect the importance of every student’s engagement with natural scientific phenomenon at the nexus of three dimensions of learning; Science and Engineering Practices, Disciplinary Core Ideas, and Crosscutting Concepts (3-D learning). When implemented, the NYSP-12SLS will result in coherent, rigorous instruction with students being able to acquire and apply scientific and mathematical knowledge to unique situations, as well as have the ability to think, reason, and problem solve scientifically⁴.

If teachers are to successfully transition from content providers to managers of inquiry learning they will need effective support to meet this challenge. Our proposal will support teachers and administrators in schools statewide in order to ensure success for teachers and their students. The NYS Education Department is planning on a “slow and deliberate” transition, allowing time for this change. This proposal will provide teachers in every region of the state with high quality, professional development and instructional and curricular support allowing them to attain experience and expertise with student-driven, 3-D instruction.

The Statewide Strategic Plan for Science, which was approved by the New York State Board of Regents in January of 2015, serves as a planning and implementation guide to support newly adopted P-12 science learning standards. Specifically, one of the goals of the Strategic Plan states we must “Initiate, build, and sustain collaborations and partnerships to provide specific and focused professional development to support the teaching and learning of core science content, conceptual understandings, and practices P-12.” Further, as an objective within that goal, the plan states, “Provide opportunities for local educational agencies to collaborate and partner with STEM education stakeholders to develop and implement effective professional development models that are based upon the new P12 NYS science learning standards.” Finally, as an activity listed within that objective, the plan further reads, “Target funding opportunities that support partnerships between business and industry, institutes of higher education, professional and science education associations, local education agencies, and other stakeholders to sustain professional development for teachers and leaders in science⁵.”

Proposal Summary:

To specifically address the activities listed above in order to support the New York's Strategic Plan for Science, the New York State Science Education Consortium requests the following actions and preliminary budget. This proposal and specific budget request must be further refined in collaboration with the NYS Education Department.

PROPOSAL: Creation of the "New York State Science Education Professional Development Network" with representation from each BOCES region and each Big City. To create this network, we would make the following suggestions:

- Create 52, three-year PD positions titled, "PD Coordinator" (on average, 1 for each of the 37 NYS BOCES regions and 3 for each of the 5 big cities). Each PD Coordinator would be supervised by their respective BOCES or big city science administration and have the following responsibilities:
 - Create and appoint a chairperson of an advisory committee comprised of local stakeholders, including science education representatives from some of the component school districts and professional organizations. This committee would define, inform, and guide the role of the PD Coordinator. Specifically, this committee would:
 - Meet on a regular basis as defined by the committee
 - Define the PD needs of their local area regarding pedagogy and assessment
 - Define how those needs shall be addressed by the PD Coordinator including when and how professional development opportunities for the local area schools shall be offered
 - Assess the effectiveness of the PD opportunities and adjust accordingly in conjunction with the PD coordinator
 - Based on the specific recommendations of their regional advisory committee, each PD Coordinator will plan and conduct appropriate PD opportunities
 - Elicit feedback from participants of each PD opportunity
 - Report all regional activities and participant feedback to the advisory committee as well as the Program Administrator (see below) on a regular basis
 - Refine and adjust PD opportunities accordingly based on the participant feedback and advisory committee recommendations.
- Create a position titled, "Program Administrator" which would have the following responsibilities:
 - Develop an annual institute to develop all PD Coordinators in 3-D instruction and learning: best practices, and exemplary methodology and a variety of local formative and summative assessment models. This will ensure consistency of turnkey PD workshops throughout New York State.
 - Ensure coordination between regional PD Coordinators
 - Serve as a bridge between PD Coordinator, BOCES, and the NYSED.
 - Oversee budget of the New York State Science Education Professional Development Network
 - Evaluate each PD Coordinator as needed, but on at least an annual basis.
- BOCES/big cities would be responsible for hiring, supervising, and providing a locale for all PD coordinators.
- Formal evaluation of the overall program will be conducted on an annual basis.

Preliminary Budget/legislative request:

- Each PD Coordinator position will be salaried at \$75,000/year plus benefits. (\$110,000 budgeted per position includes benefits and supervision).
Each PD Coordinator position will have a \$5000/year budget. A portion of this budget will be used to fund personal professional development, including cost of the annual institute, travel, room and board. Remaining monies are to be used towards supporting the professional development of teachers in their area...materials, copies, etc.)
 - 52 persons x \$110,000 = \$5,720,000 for positions
 - 52 persons x \$5,000 = \$260,000 for budget allocation
 - 1 Program Administrator x \$90,000
 - + \$35,000 for benefits
 - + \$52,000 for administrative assistant (salary and benefits)
- Grand total = \$6,157,000 per year for 3 years = \$18,471,000 over 3 years.**

References

¹ www.nextgenscience.org.

² National Research Council. (2012). A Framework for K-12 Science Education: Practices, Crosscutting Concepts, and Core Ideas. Washington, DC: The National Academies Press. 2

³ National Research Council. (2013). Next Generation Science Standards: For States, By States. Washington, DC: The National Academies Press

⁴ http://www.p12.nysed.gov/ciai/mst/sci/NYS_Science_Intro.pdf (Sept., 2017) Introduction to the New York State P-12 Science Learning Standards

⁵ <http://www.p12.nysed.gov/ciai/mst/sci/documents/Final-Statewide-Strategic-Plan-for-ScienceRev.pdf> (July, 2017) Statewide Strategic Plan for Science